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| 10/664,147      | 09/17/2003  | Jaime Navarrete      | 2001.45             | 4161             |

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EXAMINER

DOVE, TRACY MAE

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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1745

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/664,147

Applicant(s)

NAVARRETE, JAIME

Examiner

Tracy Dove

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 10-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/22/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-9, drawn to a battery separator, classified in class 429, subclass 129.
- II. Claims 10-14, drawn to a thermoplastic polymer formulation, classified in class 524, subclass 72.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because Group II does not require a microporous membrane. The subcombination has separate utility such as the microporous membrane may be used in a battery.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

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During a telephone conversation with Robert Hammer on 2/4/05 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-9. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-14 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 12/22/03 has been considered by the examiner.

### ***Claim Objections***

Claims 4 and 9 are objected to because of the following informalities: the claims recite improper group language. Examiner suggests "wherein said grass lignin source being selected from the group consisting of bagasse...and combinations thereof". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites "A battery separator...comprises a microporous membrane...and further comprising...polyethylene...filler...processing oil...lignin", which is confusing and unclear. It appears the membrane comprises the polyethylene, filler, processing oil and lignin. Examiner

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suggests claim 6 be amended to recite “weight of said membrane being ... polyethylene”, “weight of said membrane being a filler”, “weight of said membrane being a processing oil” and “weight of said membrane being a grass lignin”.

### *Claims Analysis*

The limitation “for lead acid batteries” in claim 1 and 6 is not given patentable weight because it is an intended use limitation.

The limitations “a processing oil” in claim 1 and “less than about 25% by weight of ... a processing oil” in claim 6 are not given patentable weight because the processing oil is not present in the produced separator. The specification teaches the processing oil is an “extractable component” that is used to create the microporous structure of the separator. Similarly, claim 8 is not given patentable weight because the processing oil is not present in the produced separator.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-9 rejected under 35 U.S.C. 102(b) as being anticipated by Navarrete et al., WO 02/28955 A2.

Navarrete teaches a lead acid battery separator comprising a microporous membrane including an ultra-high molecular weight polyethylene (UHMWPE), a filler, a processing oil and a lignin (abstract). Grass lignins are disclosed at page 1. The lignin is added to the UHMWPE battery separator to reduce antimony poisoning (top of page 3). The membrane generally

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comprises about 15-25 wt% UHMWPE, 50-80 wt% filler, 0-25 wt% process oil and 5-20 wt% lignin (top of page 5). The microporous membrane has an average pore size in the range of about 0.1 to about 1.0 micron and a porosity greater than 10% (bottom of page 4). The pore structure is referred to as an open cell structure (top of page 5). The filler may be precipitated silica or oxide compounds (page 5) and the processing oil may be mineral oil, olefinic oil or parafinic oil (top of page 6). Grass lignins may be obtained from rice (straw), corn or sugar cane (bagasse) (page 1).

Thus the claims are anticipated.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sawai US6,475,676 teaches a glass mat separator comprising a lignin to capture antimony ions. Sawai does not teach a UHMWPE membrane comprising a grass lignin.

Sheibley US4,371,596 teaches a flexible porous battery separator containing a lignin filler. Sheibley does not teach a UHMWPE membrane comprising a grass lignin.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is 571-272-1285. The examiner can normally be reached on Monday-Thursday (9:00-7:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Tracy Dove', with a stylized, cursive script.

Tracy Dove  
Patent Examiner  
Technology Center 1700  
Art Unit 1745

February 4, 2005